



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,547	08/04/2006	Roberto Valli	02792	6025

987	7590	01/09/2008
SALTER & MICHAELSON THE HERITAGE BUILDING 321 SOUTH MAIN STREET PROVIDENCE, RI 029037128		

EXAMINER	
MILLIKIN, ANDREW R	

ART UNIT	PAPER NUMBER
2837	

MAIL DATE	DELIVERY MODE
01/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,547

Applicant(s)

VALLI ET AL.

Examiner

Andrew Millikin

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 101905.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ring magnet, coil, driver magnet, specific adjustment devices, coil former, solid base element, and locking elements of claims 9-11 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 4 & 5 are objected to because of the following informalities: "the memory" of claim 4 has no antecedent basis. For the purposes of examination, "the memory" is interpreted as "a memory device." Additionally, "the tone modification device" of claim 5 has no antecedent basis. For the purposes of examination, "the tone modification device" is interpreted as "a tone modification device." Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 10 & 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claim 10, the characteristic of a driver magnet that is adjustable in all three dimensions using specific adjustment devices and can thus be aligned precisely with the position of the coil former fastened to the sound board is not described in such a way as to enable one skilled in the art to make and/or use the invention. In claim 11, the characteristic of the driver magnet of claim 10 being mounted in a solid base element, which is in turn fastened to a locking element of the pianoforte instrument is not

Art Unit: 2837

described in such a way as to enable one skilled in the art to make and/or use the invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 10 & 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 10, it is unclear what is meant by "specific adjustment devices." Further, it is unclear what is meant by "the coil former." In claim 11, it is unclear what is meant by a "locking element of the pianoforte instrument."

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2, 5-8 & 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Oba et al. (U.S. Patent No. 5,262,586, hereafter '586).

9. Claims 1 & 12: '586 teaches a pianoforte instrument (see abstract) comprising an action with keys (Fig. 9), including strings which are struck via a mechanism when the keys are actuated and are made to vibrate, comprising: a sound board to which the vibrations of the strings are transmitted (cols. 2-3), a device for

Art Unit: 2837

delivering additional vibration energy into the sound board (col. 3, lines 55-68), sensors, which directly or indirectly detect actuation of the keys of the action (col. 3, lines 22-54), and a sound-augmenting device to which the measured values of the sensors are supplied, said sound-augmenting device being equipped with units which compile data corresponding to a desired sound characteristic in dependence on the measured values of the sensors (col. 4-5), and wherein said sound-augmenting device supplies the sound board with additional vibration energy, corresponding to the data obtained, via the delivering device (cols. 5-6).

10. Claim 2: '586 teaches the pianoforte instrument according to claim 1, characterized in that the vibration energy that is generated externally by the sound-augmenting device is delivered in real time into the sound board via the delivering device, in addition to the vibration energy entering the sound board mechanically from the vibrating acoustic strings (col. 6).

11. Claim 5: '586 teaches the pianoforte instrument according to claim 1, including a control module, which controls a tone modification device, such that the individual sound design is facilitated by selectively influencing the tones (col. 4, lines 1-11).

12. Claim 6: '586 teaches the pianoforte instrument according to claim 5, including an amplifier module, which amplifies the signals received from the control module (col. 4, lines 36-66).

13. Claim 7: '586 teaches the pianoforte instrument according to claim 6, characterized in that the signals issuing from the amplifier module are supplied to the

Art Unit: 2837

device for delivering vibration energy, where they are converted into mechanical vibrations and introduced into the sound board (cols. 5-6).

14. Claim 8: '586 teaches the pianoforte instrument according to claim 1, characterized in that the device for delivering vibration energy comprises one or more driver systems (parts (12e-12k, 132); col. 6).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over '586, as applied to claim 1 above, in view of Nozaki et al. (U.S. Patent No. 5,247,129, hereafter '129) & Carter, Jr. (U.S. Patent No. 6,700,047, hereafter '047).

18. Claim 3: '586 teaches the pianoforte instrument according to claim 1, but does not explicitly teach that the sound-augmenting device comprises a tone sample memory and in that tone samples are associated with the tones, including the partial tones thereof from the memory, that correspond to the key actuations registered by the sensors in the action of the instrument. However, '129 teaches a method of using samples (col. 34, lines 52-61) as a basis for driving the sound board of a stringless piano (see also the abstract). Additionally, '047 teaches that in a stringed piano, it is beneficial to play samples of a high-quality device during a performance on a lower-quality device to increase the quality of the sound (see abstract; see also cols. 1-2). '047 also teaches orienting a speaker towards the soundboard (col. 6, lines 14-18). In view of '129 & '047, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used samples with '586 in order to have made lower-quality pianos sound more like high-quality pianos, since both '129 and '047 teach that samples can be used in order to actuate the soundboard of a piano, and since '047 teaches that using samples in a stringed piano helps to improve the quality of the sound of a lower-quality piano.

19. Claim 4: Given the combination of '586, '129, and '047 above, '586 would provide the claimed control module, which controls a tone modification device, such that the individual sound design is facilitated by selectively influencing the tones (see '586, cols. 4-5). Since '586 teaches allowing the tone of the "recorded and reproduced" to be controlled (cols. 4-5), it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have allowed a tone generated in a fashion like that of the obvious combination of '586, '129, and '047 to be controlled in the same way.

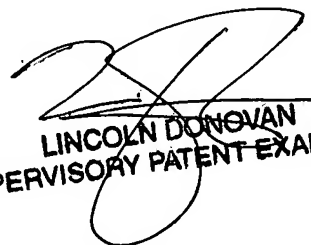
20. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over '586, as applied to claim 8 above, in view of Ishimura et al. (U.S. Patent No. 5,581,623, hereafter '623) or '129 or the knowledge of one of ordinary skill in the art at the time of the invention, as evidenced by '623 & '129. '586 teaches the pianoforte instrument according to claim 8, but does not explicitly teach that each driver system comprises a ring magnet, in the core of which there is arranged a coil, which is fixed to the sound board and drives the sound board. '586 does, however, teach that the actuators are attached to the soundboard (col. 3, lines 55-68). '623 teaches that actuators are commonly constructed of a ring magnet (12), in the core of which there is arranged a coil (10), fixed to whatever it is that is desired to be moved (whether it be a diaphragm, a soundboard, or anything else) (see Fig. 7 & col. 5, lines 28-34). Further, '129 teaches that the electromagnetic actuators used to drive the soundboard can be "implemented by a moving coil type magnetic circuit." Thus, given the knowledge of one of ordinary skill in the art at the time the invention was made, '623, or '129, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a ring magnet, in the core of which there is arranged a coil, as the specific structure for the actuators described in '586 which are fixed to the sound board and drive the sound board.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Millikin whose telephone number is 571-270-1265. The examiner can normally be reached on M-R 7:30-5 and 7:30-4 Alternating Fridays (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER